

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Benchmarking the burden of 100 diseases: results of a nationwide representative survey within general practices.
AUTHORS	Lamia Grimaldi-Bensouda, Bernard Begaud, France Lert, Frederic Rouillon, Jacques Massol, Didier Guillemot, Bernard Avouac, Gerard Duru, Anne-Marie Magnier, Michel Rossignol, and Lucien Abenhaim

VERSION 1 - REVIEW

REVIEWER	Irwin Nazareth, University College London
REVIEW RETURNED	29/07/2011

THE STUDY	1) I could not find a direct comparison between those recruited to the study (i.e. GPs and patients) and those that would be expected in the country as whole 2) The statistical multivariable analyses does not account for the clustering effects at the practice level
RESULTS & CONCLUSIONS	None
REPORTING & ETHICS	None
GENERAL COMMENTS	The clinical and reserach implications of the study results need to be more clearly desccribed in the final section of the discusson of the paper

REVIEWER	Professor Theo Vos University of Queensland Australia
REVIEW RETURNED	03/07/2011

THE STUDY	some of these questions are hard to answer as they are not clearly a dichotomy between yes and no; Last question is particularly ambiguous as one can answer yes to first part and no to second part!
RESULTS & CONCLUSIONS	None
REPORTING & ETHICS	None
GENERAL COMMENTS	This is a useful descriptive paper on QoL by different diseases in general practice. It is a bit unfortunate the abbreviated 100 item list of ICD-9 was used as it combined rather disparate conditions in same category (e.g. dependance and personality disorder; burns and amputations) and splits what are similar problems

	<p>across different categories (e.g. lumbago, other back problems; sciatica and disk problems).</p> <p>A useful addition would be to compute utilities from SF-12 and (even better) if authors can explore assumption of multiplicative model for comorbidity and QoL in their dataset. If not in this paper ... in a next?</p> <p>Specific comments:</p> <p>P8 line 18: reassure seems wrong word; why would it reassure respondents to know the name of a pharmaceutical company sponsoring the study?</p> <p>P8 line 38: self-reported or measured BMI?</p> <p>P11 lines 45-55: please describe how additional GPs were recruited from initial 3345 with 13% response to total of 825 participating GPs at 'end of recruitment'. Links in with statement on page 22, line 34, where you mention 'stratified recruitment phases' without having fully explained in methods. Also, what was final response?</p> <p>Table 1: superscript for secondary school degree does not match explanatory note below</p> <p>Page17, figure 1: instead of figure, a table might be more informative and would obviate need to mention estimates in text</p> <p>P17-18: avoid repeating values in text that are already listed in table</p> <p>P20 line 36: remove word 'also' from this sentence as the sentence message is about a different mean PCS in general population while previous sentence mentions similar mean PCS from other GP studies</p> <p>P21 lines 22-32: flow of sentence seems odd; I don't understand word 'but' combining first part of sentence with message 'consistent with' and second part with message 'more similar'. You probably want to split this into two sentences</p> <p>P21 line 52: cited paper converts SF-12 scores to EQ5D+ derived utilities; I suggest you change the awkward phrase: 'the conversion of SF-12 values to EQ5D conversion'. There are also methods to derive utility values direct from SF-12 rather than through EQ5D</p> <p>P22 line 42: 'most common' alludes to a comparison which you do not make; just mention 'common'?</p> <p>P22, lines 52-62: I don't follow the argument; e.g. which findings were supported where? ...and what is link with rest of sentence?</p>
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VERSION 1 – AUTHOR RESPONSE

Comments and proposed Responses

Reviewer #1: Professor Theo Vos
University of Queensland
Australia

This is a useful descriptive paper on QoL by different diseases in general practice. It is a bit unfortunate the abbreviated 100 item list of ICD-9 was used as it combined rather disparate conditions in same category (e.g. dependence and personality disorder; burns and amputations) and splits what are similar problems across different categories (e.g. lumbago, other back problems; sciatica and disk problems).

We thank the reviewer for this pertinent comment and we agree that combining some of the categories might seem inappropriate. However, we followed strictly the ICD-9 classification and in a few instances grouping under the same ICD heading was necessary in order to ensure sufficient

power for comparisons between groups as mentioned in the revised manuscript (page 10/11, lines 206-216). It was therefore decided to keep the existing presentation of one hundred diseases categories.

A useful addition would be to compute utilities from SF-12 and (even better) if authors can explore assumption of multiplicative model for comorbidity and QoL in their dataset. If not in this paper ... in a next?

We thank the reviewer for this suggestion. We are in fact working on implementing severity scales and multiplicative models for comorbidity for uses relating SF12 to utility values. As mentioned in the discussion on page24 lines 425-428 « it was a deliberate choice for us to provide an instant overview of general practice across France” and the purpose of this paper was mostly to provide reference figures currently lacking for primary care in France.

Specific comments:

P8 line 18: reassure seems wrong word; why would it reassure respondents to know the name of a pharmaceutical company sponsoring the study?

We agree with the reviewer and the sentence has been deleted (page 8; lines 145-146).

P8 line 38: self-reported or measured BMI?

The BMI was calculated according to every patient's height and weight as declared in the self-administered questionnaire. Please refer to further clarifications under the data collection section (page 8, lines 148-154).

P11 lines 45-55: please describe how additional GPs were recruited from initial 3345 with 13% response to total of 825 participating GPs at 'end of recruitment'. Links in with statement on page 22, line 34, where you mention 'stratified recruitment phases' without having fully explained in methods. Also, what was final response?

We agree with the reviewer; in fact, overall response rate was not given in the results section because it does not reflect the reality of the stratified recruitment phases and was also difficult to interpret.

There were two phases of recruitment:

- A first phase during which 476 out 3345 randomly contacted GPs agreed to participate in the study (i.e. 14.2%). And among those, 428 GPs (90%) recruited at least one patient.
- A second phase consisting of an additional random quota sampling of GPs to obtain a sufficient number of GPs from all types of primary care practice in France (strictly allopaths, homeopaths and GPs with mixed practice); at this stage, a total of 13 861 physicians were contacted, 526 agreed to participate and of these, 397 included at least one patient. Altogether, this can be translated into an overall 5% response rate from GPs despite the intrusive nature of the survey, allowing trained research assistants to collect data directly in the waiting room at the medical practice on the day of consultation. As discussed in the methods section, weighting and calibration ensured high representativeness of the final sample as discussed in the paper. We have therefore explained the recruitment in more detail at the beginning of the results section.

Table 1: superscript for secondary school degree does not match explanatory note below

A modification has been made accordingly in table 1.

Page17, figure 1: instead of figure, a table might be more informative and would obviate need to mention estimates in text

Following the reviewer's suggestion, these estimates are now included in the revised manuscript

but we found legitimate to keep Figure 1, which illustrates how the SF-12 MCS and PCS scores decline as the number of comorbidities increase (under the results section; page 18, lines 299-301)

P17-18: avoid repeating values in text that are already listed in table

Done, thanks for picking this up.

P20 line 36: remove word 'also' from this sentence as the sentence message is about a different mean PCS in general population while previous sentence mentions similar mean PCS from other GP studies

Requested change was done to page 21 on line 355.

P21 lines 22-32: flow of sentence seems odd; I don't understand word 'but' combining first part of sentence with message 'consistent with' and second part with message 'more similar'. You probably want to split this into two sentences

The aforementioned sentence was rephrased as suggested (page 22; line 32).

P21 line 52: cited paper converts SF-12 scores to EQ5D+ derived utilities; I suggest you change the awkward phrase: 'the conversion of SF-12 values to EQ5D conversion'. There are also methods to derive utility values direct from SF-12 rather than through EQ5D

We agree with the reviewer and we have therefore rephrased the sentence and added a new citation to support the direct derivation of utility values from SF12 (page 22, lines 386-388).

P22 line 42: 'most common' alludes to a comparison, which you do not make; just mention 'common'?

Suggested change was done to pages 5 (line 90) and 20 (line 90 and 421).

P22, lines 52-62: I don't follow the argument; e.g. which findings were supported where? ...and what is link with rest of sentence?

We agree that this sentence is inappropriately formulated; to echo the comment from reviewer #1, a new sentence has been added to P23, lines 426-428.

Reviewer #2: Irwin Nazareth
University College London
UK

This is a useful study conducted in French Primary Care that aims to provide data on the disease burden in primary care. In particular the SF12 PCS and MCS scores would be particularly useful to health planner and health economist in deriving QALYs when creating health care and cost models. The study has provided a good description of its sampling methods and appears to have been well conducted.

1) I could not find a direct comparison between those recruited to the study (i.e. GPs and patients) and those that would be expected in the country as whole

Indeed an important point and to echo to reviewer's comment, we add an explanation to the discussion section (see below and also in the revised text on pages 22/23, lines 395 to 407):

The sample size of physicians participating in the EPI3-Laser study is within the range established for other French surveys (from 100 to 1006).

The weighted geographical distribution of the 825 GPs participating in the survey was similar to the national distribution of GPs in private practice across the 22 French regions surveyed.

The distribution of physicians' individual characteristics regarding age, gender, type of contract with national health insurance, type of practice differs only slightly from the national figures: female participation is slightly lower (23.5% compared to 26% in the IRDES sample), but the distribution between sectors is similar (8.9% vs. 8.5% in sectors 1 and 2, respectively). Physicians were randomly selected from the national telephone directory, which includes general practitioners currently practising in primary care. This was preferred to professional registries of physicians, which lists all registered GPs, regardless of whether they are currently practising or not.

2) The statistical multivariable analyses does not account for the clustering effects at the practice level

We thank the reviewer for this pertinent comment. Indeed the possibility of a clustering effect could have affected the results.

Firstly, each of the 825 GPs participating in the study recruited in average 8.7 patients with a low standard deviation (2.2), which reduced the possibility of such a clustering effect.

Secondly, we performed new analyses taking into account this effect using GEE (Generalised Estimating Equations) multivariate models with the same adjustments

All the results remained unchanged. For example for table 3, association between low PCS and older age [OR = 2.48; 95% CI (2.08 – 2.96) for patients over 75 years as compared to adults between 18 and 44 years] was of similar magnitude than OR estimated by GEE models [(OR = 2.50; 95% CI (1.76 – 3.54)]. Association between low MCS and gender were comparable: OR=1.62; 95% CI (1.45 – 1.81) for women as compared to men in our model and OR= 1.63 [1.43 – 1.85] in the GEE models.

Same conclusions were found when comparing estimates of the association between each of the 13 diseases categories and lowest quartile of PCS and MCS. For instance, using GEE, association between musculoskeletal disease and low PCS was of 2.33 CI95% [2.01 – 2.70]. Association between anxiety, depression and sleep disorders and low MCS was of 3.60 [3.23 – 4.01]. Hence, for parsimony of the models presented in our manuscript we decided to keep the actual results but we stated the clustering effect issue in both statistical analysis and results section.

EDITOR'S COMMENTS

The following points must be considered in the revision of this paper

1) What questionnaires was use to collect demographic data? How was BMI ascertained? How was physical activity data collected? Who provided information on consultation rates in the last 12 months?

We agree with the reviewer that these elements must be mentioned in the manuscript. We have therefore provided all the requested information in the data collection section (page 8, lines 148-154).

"Patients were asked to self-complete a questionnaire covering demographic and social information (age, sex, education, employment status and occupation, smoking, alcohol intake, physical activity and body mass index), health insurance (regular national insurance, welfare health insurance for low income, with or without supplementary private insurance), the number of visits to the participating physician within the last 12 months, or, for the same period, to other GPs or medical specialists, the length and number of hospitalisations and sick leaves.

2) Did the statistical analyses take into consideration the clustering effects at the general practice level?

Please refer to our reply to the second comment from reviewer #2 above.

3) Table 1: must be discussed in discussion section of the paper it would be useful to indicate the extent to which the selection of physicians in this study was representative of the physician in France as whole on age sex etc. Similarly, it would be useful to indicate how closely the study sample was representative of the French GP attender population as whole.

Please refer to our reply to the first comment from reviewer #2 above.

4) Clarification on whether table 2 lists the main reason for consultation or whether it is a compilation of all the five diagnoses recorded.

We admit that the presentation of these results could have been somewhat confusing, so in addition to rephrasing the footnotes of the table 2 (i.e., each category of disease in non-exclusive) we now specify also in the revised manuscript (page 14, lines 178-279) that table 2 lists a compilation of all the five diagnoses recorded.

5) The final section of the discussion should explore the applications of the study findings to clinical practice and future research.

Following your suggestion, applications of the study findings to clinical practice and future research have been added to the final part of the revised manuscript (page 24/25, lines 439 to 446).